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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,265	11/17/2003	Thomas Pun	APLE.P0037	6487

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EXAMINER	
WERNER, DAVID N	

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	Application No. 10/716,265	Applicant(s) PUN ET AL.	
	Examiner David N. Werner	Art Unit 2621	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 17 December 2007 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☐ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☐ The period for reply expires ______months from the mailing date of the final rejection.
   b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☒ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *1-36*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See attachment.
12. ☐ Note the attached Information Disclosure Statement(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

DNW

DETAILED ACTION

This Advisory action for US Patent Application 10/716,265 is in response to the amendment filed after a Final rejection under 37 CFR 1.116. This amendment has been entered. Currently, claims 1-36 are pending.

Response to Arguments

Applicant has itemized a list of adverse elements of the prior Office Action in presenting arguments. These arguments will be discussed below in accordance with the applicant's arrangement.

I. Objections to Drawings

Applicant's amendment to the specification, clarifying that figure 1 is directed to an embodiment of the present invention, has been fully considered. The objection to figure 1 for lacking a "Prior Art" label has been withdrawn.

II. Objections to Priority

Applicant's amendment to the specification, clarifying the relation between the present invention and other commonly-assigned co-pending applications, has been fully considered. It is not necessary to re-submit an Information Disclosure Statement.

III. Double Patenting Claim Rejections

At applicant's request, the double-patenting rejection of claims 1, 4, 16, and 19 has been held in abeyance until allowable subject matter is indicated.

IV. Objection to Claims 31-36

Applicant's amendments to claims 31-36 have been fully considered. The objection to claims 31-36 on formalities has been withdrawn.

V. Rejection of Claims 1-4 and 32 under 35 U.S.C. 102(b)

Applicant's arguments filed with respect to claims 1-4 and 32 have been fully considered but they are not persuasive. Applicant argues that Chiang et al. does not teach determining a "buffer occupancy accumulator" as "a difference between an actual amount of bits used and a requested amount of bits", and that Chiang et al. does not teach "limiting" this buffer occupancy accumulator.

The examiner thanks Applicant for clarifying the meaning of the term "accumulator" in the present invention as a calculated variable, not a hardware component as is ordinarily understood in the art. Then, in Chiang et al., the rate control module 130 itself is not an "accumulator", but as will be shown below, it determines the accumulator value.

Additionally, although in Chiang et al., buffer fullness measure Ri itself is not the claimed "buffer occupancy accumulator", although as will be presently shown, the claimed calculation for the accumulator is used in determining Ri. Column 13: lines 43-

59 describe Ri as calculated according to the formula $R_i = R_0 + B_{i-1} - \frac{T*(i-1)}{N_{MB}}$. The B term, defined as "the number of bits generated by encoding all macroblocks up to and including the i-1 macroblocks", corresponds with the claimed "actual amount of bits used", and the T term, defined as "the target bit budget...in the previous frame", multiplied by the proportion of already-calculated macroblocks in the present frame, corresponds with the claimed "requested amount of bits". The difference, then, between the B term and the T term is the claimed "buffer occupancy accumulator" value. The buffer occupancy accumulator value is added to initial buffer fullness measure Ro to determine current buffer fullness Ri. Then, since buffer fullness measure Ri, calculated from the buffer occupancy accumulator, "ensures that the encoder will not underflow or overflow the buffer" (column 13: lines 60-65), it is inherent that this value, and consequently, the accumulator value, are limited. Therefore, the examiner respectfully maintains the rejections of claims 1-4 and 32 under 35 U.S.C. 102(b).

VII(A). Rejection of claim 5 under 35 U.S.C. 102(b)

Applicant's arguments filed with respect to claim 5 have been fully considered but they are not persuasive. Applicant argues that Saunders et al. does not teach the claimed process of encoding a video with a quantizer value comprised of the sum of a base quantizer value and a quantizer adjustment. Applicant's analysis of the prior art is correct in stating that the base quantizer level chosen from one of 10 possible values by bit allocator 170 corresponds with the claimed "determining a base quantizer value".

However, in the arguments, Applicant failed to address in Saunders, binary search unit 190, which "carries out trial quantizations at quantization levels just above or just below the base quantization level, again modified by the quantization index offsets associated with each block, to select one value within a range of -3 to +4 with respect to the base quantization level from the bit allocator" (column 5: lines 45-50), and carries out additional trials with higher quantization levels (column 5: lines 51-55). It is thus respectfully submitted that the modified quantization level determined from binary search unit 190, being comprised of the sum of a base quantization level and an adjustment having a range of -3 to +4, instead of the base quantization level alone determined from bit allocator 170, is the "selected quantization level" mentioned in column 5: line 56, which the Applicant asserts to merely be the "base value itself" (Arguments, pg. 15: lines 10, 13). Therefore, the examiner respectfully maintains the rejection of claim 5 under 35 U.S.C. 102(b).

VII(B). Rejection of claim 5 under 35 U.S.C. 103(a)

Using the same analysis of the claim in section VII(A) above, it is respectfully submitted that Saunders teaches the claimed method of quantizing digital video information that (1) determines a base quantizer value, (2) determines a quantizer adjustment based on frame properties, and (3) computes a quantizer value as a sum of the base quantizer value and the quantizer adjustment. Therefore, the examiner respectfully maintains the rejection of claims 5-13 and 33 under 35 U.S.C. 103(a).

VIII. Rejection of claims 14-15 and 34 under 35 U.S.C. 102(b)

Applicant's arguments filed with respect to claims 14, 15, and 34 have been fully considered but they are not persuasive. Applicant asserts that since the method of figure 4 determines a quantizer based on "the actual data resulting from the encoding process", the mapping of the claimed "number of bits that should have been used" to the T-term in equation 15 of Chiang et al. The examiner respectfully disagrees for two reasons: first, although a target bit budget may merely be "the number of bits necessary to encode previous I, P, and B frames", a target bit rate for a frame type may also be determined from MPEG Test Models 4 or 5 (column 13: lines 36-38), and second, even if T is determined directly as the number of bits needed to encode a previous frame, this is irrelevant to its definition as a "target bit rate" or "target bit budget" for a current frame. Therefore, the examiner respectfully maintains the rejection of claims 14-15 and 35 under 35 U.S.C. 103(a). However, it is noted that "the number of bits actually used" in claim 14 is mapped to the B-term alone in equation 15 of Chiang et al., not the sum of the R-term and the B-term, as stated in the Final rejection. This brings the analysis of claim 14 in harmony with the analysis of claim 1 in section V above.

IX. Claims 16-19 and 35

Applicant is correct in stating that claim 16 of the present invention was rejected using the same grounds of rejection as claim 1. This rejection is respectfully maintained. See section V of the present action.

X. Claims 20-28 and 36

Applicant is correct in stating that claim 20 of the present invention was rejected using the same grounds of rejection as claim 5. This rejection is respectfully maintained. See section VII(B) of the present action.

XI. Claims 29-31

Applicant is correct in stating that claim 29 of the present invention was rejected using the same grounds of rejection as claim 14. This rejection is respectfully maintained. See section VIII of the present action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Werner whose telephone number is (571) 272-9662. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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